WHAT IS CLAIMED IS:

1. A programmable controller capable of interfacing with a remote master controller, wherein said programmable controller is capable of controlling an input current to at least one load, said programmable controller comprising:

at least one solid-state switch capable of controllably altering the input current to the at least one load;

at least one measuring element for measuring at least one parameter associated with the at least one load and said at least one solid-state switch; and

a processing element disposed proximate the at least one load, and electrically connected to said at least one solid-state switch and said at least one measuring element, wherein said processing element is capable of controlling said at least one solid-state switch according to the at least one parameter.

2. A programmable controller according to Claim 1, wherein each said solid-state switch comprises:

a switching element electrically connected to the at least one load, wherein said switching element is capable of altering the input current to the at least one load; and

a drive element for providing the input current to the at least one load, wherein said switching element controls the input current provided by said drive element to said at least one load.

3. A programmable controller according to Claim 2, wherein said switching element has a maximum current rating, and wherein each solid-state switch further comprises a switch-protection element electrically connected to said switching element and said drive element, wherein said switch-protection element is capable of sensing an actual current through said switching element and controlling the input current to the at least one load depending upon the actual current and the maximum current rating.

4. A programmable controller according to Claim 3, wherein said switch-protection element is capable of controlling said drive element to provide the input current to a respective load such that the actual current through said switching element is no more than the maximum current rating.

5. A programmable controller according to Claim 3, wherein when the actual current through said switching element exceeds the maximum current rating for more than a predefined period of time, said switch-protection element controls said drive element to thereby reduce the actual current through said switching element to no more than the maximum current rating.

6. A programmable controller according to Claim 1, wherein said at least one measuring element is capable of measuring a voltage drop across a respective load, and wherein said processing element is capable of controlling said at least one solid-state switch according to the voltage drop across the respective load.

7. A programmable controller according to Claim 1, wherein said at least one measuring element is capable of measuring a current through a respective load, and wherein said processing element is capable of controlling said at least one solid-state switch according to the current through the respective load.

8. A programmable controller according to Claim 1, wherein said at least one measuring element is capable of measuring a temperature of said at least one solid-state switch, and wherein said processing element is capable of controlling said at least one solid-state switch according to the temperature of a respective solid-state switch.

9. A programmable controller according to Claim 8 further comprising a memory device electrically connected to said processing element.

10. A programmable controller according to Claim 1 further comprising a monitoring element electrically connected to said processing element and said at least one solid-state switch, wherein when said processing element fails to function properly by failing to control said at least one solid-state switch, said monitoring element is capable of controlling said solid-state switch to alter the input current to a predefined level.

11. A programmable controller according to Claim 1, wherein said at least one solid-state switch operates in at least one mode selected from a group consisting of an on mode wherein said at least one solid-state switch permits a respective load to receive the input current, and an off mode wherein said at least one solid-state switch prevents the respective load from receiving the input current, and wherein said processing element controls the mode depending upon the at least one parameter.

12. A programmable controller according to Claim 11, wherein each load has an input current rating, and wherein said processing element controls the mode of said at least one solid-state switch depending upon the input current and input current rating of a respective load.

13. A programmable controller according to Claim 12, wherein when the input current to a respective load is no more than the input current rating of the load said processing element operates the respective solid-state switch in the on mode, and wherein when the input current to the load exceeds the input current rating the processing element places the respective solid-state switch in the off mode.

14. A programmable controller according to Claim 12, wherein said processing element controls the mode of said at least one solid-state switch depending upon the input current, the input current rating of a respective load and an amount of time the load has received the input current.

15. A programmable controller according to Claim 14, wherein when the input current to a respective load is no more than the input current rating of the load said processing element operates the respective solid-state switch in the on mode, and wherein when the input current to the load exceeds the input current rating for more than a predefined period of time the processing element places the respective solid-state switch in the off mode.

16. A programmable controller according to Claim 15, wherein when the input current to a respective load exceeds the input current rating, said processing element repeatedly increases a count associated with an elapsed time until at least one occurrence selected from a group consisting of the input current reduces to no more

than the input current rating and the count reaches a predetermined threshold representative of the predefined period of time, wherein when the input current reduces to no more than the input current rating, the processing element repeatedly decreases the count.

17. A programmable controller according to Claim 11, wherein said at least one solid-state switch has a maximum current rating, wherein when the input current through a respective solid-state switch is no more than a respective maximum current rating said processing element operates the respective solid-state switch in the on mode, and wherein when the input current through said solid-state switch exceeds the respective maximum current rating said processing element places the respective solid-state switch in the off mode.

18. A programmable controller according to Claim 11, wherein said at least one solid-state switch has a maximum current rating, wherein when the current through a respective solid-state switch exceeds a respective maximum current rating for more than a predefined period of time, said processing element places the respective solid-state switch in the off mode.

19. A programmable controller according to Claim 11, wherein said processing element controls the mode of said at least one solid-state switch depending upon a temperature of a respective solid-state switch.

20. A programmable controller according to Claim 19, wherein when the temperature of a respective solid-state switch is no more than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the temperature exceeds the predetermined value the processing element places the respective solid-state switch in the off mode.

21. A programmable controller according to Claim 19, wherein when the temperature of a respective solid-state switch is no less than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the temperature is below the predetermined value the processing element places the respective solid-state switch in the off mode.

22. A programmable controller according to Claim 11, wherein said processing element controls the mode of said at least one solid-state switch depending upon a voltage drop across a respective load.

23. A programmable controller according to Claim 22, wherein when the voltage drop across a respective load is no more than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the voltage drop exceeds the predetermined value the processing element places the respective solid-state switch in the off mode.

24. A programmable controller according to Claim 22, wherein when the voltage drop across a respective load is no less than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the voltage drop is below the predetermined value the processing element places the respective solid-state switch in the off mode.

25. A programmable switch controller capable of interfacing with a remote master controller, wherein said switch controller is capable of electrically controlling an input current to at least one load, said switch controller comprising

at least one solid-state switch capable of controllably altering the input current to the at least one load, wherein said solid-state switch operates in at least one mode selected from a group consisting of an on mode wherein said solid-state switch permits the at least one load to receive the input current, and an off mode wherein said solid-state switch prevents the at least one load from receiving the input current;

at least one measuring element for measuring at least one parameter associate with the at least one load and said at least one solid-state switch; and

a processing element disposed proximate the at least one load, and electrically connected to said at least one solid-state switch and said at least one measuring element, wherein said processing element is capable of controlling the operating mode of each solid-state switch according to the at least one parameter.

26. A programmable switch controller according to Claim 25 wherein each solid-state switch comprises:

a switching element electrically connected to the at least one load, wherein said switching element is capable of operating in at least one mode consisting of the on mode and the off mode; and

a drive element for providing the input current to the at least one load, wherein said switching element controls the input current provided by said drive element to said at least one load.

27. A programmable switch controller according to Claim 25 further comprising a memory device electrically connected to said processing element.

28. A programmable switch controller according to Claim 25 further comprising a monitoring element electrically connected to said processing element and said at least one solid-state switch, wherein when said processing element fails to function properly by failing to control said at least one solid-state switch, said monitoring element is capable of controlling the operating mode of said at least one solid-state switch.

29. A programmable switch controller according to Claim 25, wherein said at least one solid-state switch has a maximum current rating, and wherein said programmable switch controller further comprises at least one switch-protection element capable of sensing an actual current through said at least one solid-state switch and controlling the operating mode of the respective solid-state switch depending upon the actual current through the respective solid-state switch a respective maximum current rating.

30. A programmable switch controller according to Claim 29 wherein when the actual current through the respective solid-state switch is no more than a respective maximum current rating said switch-protection element operates the respective solid-state switch in the on mode, and wherein when the actual current through the respective solid-state switch exceeds the respective maximum current rating said switch protection element places the respective solid-state switch in the off mode.

31. A programmable switch controller according to Claim 29, wherein when the actual current through the respective solid-state switch exceeds a respective maximum current rating for more than a predefined period of time, said switch protection element places the respective solid-state switch in the off mode.

32. A programmable switch controller according to Claim 25, wherein said at least one measuring element is capable of measuring a current through a respective load, and wherein said processing element is capable of controlling the operating mode of said at least one solid-state switch according to the current through the respective load.

33. A programmable switch controller according to Claim 25, wherein the at least one load has an input current rating, and wherein said processing element controls the mode of said at least one solid-state switch depending upon the input current and input current rating of a respective load.

34. A programmable switch controller according to Claim 33, wherein when the input current to the at least one load is no more than the input current rating of a respective load the processing element operates the respective solid-state switch in the on mode, and wherein when the input current to the load exceeds the input current rating the processing element places the respective solid-state switch in the off mode.

35. A programmable switch controller according to Claim 33, wherein said processing element controls the mode of said at least one solid-state switch depending upon the input current, the input current rating of a respective load and an amount of time the load has received the input current.

36. A programmable switch controller according to Claim 35, wherein when the input current to a respective load is no more than the input current rating of the load said processing element operates the respective solid-state switch in the on mode, and wherein when the input current to the load exceeds the input current rating for more than a predefined period of time the processing element places the respective solid-state switch in the off mode.

37. A programmable switch controller according to Claim 36, wherein when the input current to a respective load exceeds the input current rating, said processing element repeatedly increases a count associated with an elapsed time until at least one occurrence selected from a group consisting of the input current reduces to no more than the input current rating and the count reaches a predetermined threshold representative of the predefined period of time, wherein when the input current reduces to no more than the input current rating, the processing element repeatedly decreases the count.

38. A programmable switch controller according to Claim 25, wherein said at least one measuring element is capable of measuring a temperature of said at least one solid-state switch, and wherein said processing element is capable of controlling the operating mode of a respective solid-state switch according to the temperature of said solid-state switch.

39. A programmable switch controller according to Claim 38, wherein when the temperature of a respective solid-state switch is no more than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the temperature exceeds the predetermined value the processing element places the respective solid-state switch in the off mode.

40. A programmable switch controller according to Claim 38, wherein when the temperature of a respective solid-state switch is no less than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the temperature is below the predetermined value the processing element places the respective solid-state switch in the off mode.

41. A programmable switch controller according to Claim 25, wherein said at least one measuring element is capable of measuring at least one voltage drop across the at least one load, and wherein said processing element controls the mode of a respective solid-state switch depending upon a voltage drop across a respective load.

42. A programmable switch controller according to Claim 41, wherein when the voltage drop across the at least one load is no more than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the voltage drop exceeds the predetermined value the processing element places the respective solid-state switch in the off mode.

43. A programmable switch controller according to Claim 41, wherein when the voltage drop across the at least one load is no less than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the voltage drop is below the predetermined value the processing element places the respective solid-state switch in the off mode.

44. A system of remotely controlling at least one load, said system comprising:

a master controller for controlling an input current to the at least one load;

at least one slave controller disposed remote said master controller and proximate the at least one load, wherein said at least one slave controller is electrically connected between said master controller and the at least one load, and wherein said at least one slave controller comprises:

at least one solid-state switch capable of controllably altering the input current to the at least one load;

at least one measuring element for measuring at least one parameter associated with the at least one load and the at least one solid-state switch, wherein said solid-state switch controllably alters the input current to the at least one load according to the at least one parameter; and

a processing element electrically connected to said at least one solid-state switch and said at least one measuring element, and capable of controlling said at least one solid-state switch.

45. A system according to Claim 44 wherein each said solid-state switch comprises:

a switching element electrically connected to the at least one load, wherein said switching element is capable of altering the input current to the at least one load; and

a drive element for providing the input current to the at least one load, wherein said switching element controls the input current provided by said drive element to said at least one load.

46. A system according to Claim 45, wherein said switching element has a maximum current rating, and wherein said solid-state switch further comprises a switch-protection element electrically connected to said switching element and said drive element, wherein said switch-protection element is capable of sensing an actual current through said switching element and controlling the input current to the at least one load depending upon the actual current and the maximum current rating.

47. A system according to Claim 46, wherein said switch-protection element is capable of controlling said drive element to provide the input current to a respective load such that the actual current through said switching element is no more than the maximum current rating.

48. A system according to Claim 46, wherein when the actual current through said switching element exceeds the maximum current rating for more than a predefined period of time, said switch-protection element controls said drive element to thereby reduce the actual current through said switching element to no more than the maximum current rating.

49. A system according to Claim 44 further comprising a user interface electrically connected to said master controller, wherein a user interacts with said user interface to control the input current to the at least one load.

50. A system according to Claim 44, wherein said at least one measuring element is capable of measuring a voltage drop across a respective load, and wherein said processing element is capable of controlling said at least one solid-state switch according to the voltage drop across the respective load.

51. A system according to Claim 44, wherein said at least one measuring element is capable of measuring a current through a respective load, and wherein said

processing element is capable of controlling said at least one solid-state switch according to the current through the respective load.

52. A system according to Claim 44, wherein said at least one measuring element is capable of measuring a temperature of said at least one solid-state switch, and wherein said processing element is capable of controlling said at least one solid-state switch according to the temperature of a respective solid-state switch.

53. A system according to Claim 52 further comprising a memory device electrically connected to said processing element.

54. A system according to Claim 44 further comprising a monitoring element electrically connected to said processing element and said at least one solid-state switch, wherein when said processing element fails to function properly by failing to control the input current, said monitoring element is capable of controlling said at least one solid-state switch to alter the input current to a predefined level.

55. A system according to Claim 44, wherein said at least one solid-state switch operates in at least one mode selected from a group consisting of an on mode wherein said at least one solid-state switch permits a respective load to receive the input current, and an off mode wherein said at least one solid-state switch prevents the respective load from receiving the input current, and wherein said processing element controls the mode depending upon the at least one parameter.

56. A system according to Claim 55, wherein each load has an input current rating, and wherein said processing element controls the mode of said at least one solid-state switch depending upon the input current and input current rating of a respective load.

57. A system according to Claim 56, wherein when the input current to a respective load is no more than the input current rating of the load said processing element operates the respective solid-state switch in the on mode, and wherein when the input current to the load exceeds the input current rating the processing element places the respective solid-state switch in the off mode.

58. A system according to Claim 56, wherein said processing element controls the mode of said at least one solid-state switch depending upon the input current, the input current rating of a respective load and an amount of time the load has received the input current.

59. A system according to Claim 58, wherein when the input current to a respective load is no more than the input current rating of the load said processing element operates the respective solid-state switch in the on mode, and wherein when the input current to the load exceeds the input current rating for more than a predefined period of time the processing element places the respective solid-state switch in the off mode.

60. A system according to Claim 59, wherein when the input current to a respective load exceeds the input current rating, said processing element repeatedly increases a count associated with an elapsed time until at least one occurrence selected from a group consisting of the input current reduces to no more than the input current rating and the count reaches a predetermined threshold representative of the predefined period of time, wherein when the input current reduces to no more than the input current rating, the processing element repeatedly decreases the count.

61. A system according to Claim 55, wherein said at least one solid-state switch has a maximum current rating, wherein when the input current through a respective solid-state switch is no more than a respective maximum current rating said processing element operates the respective solid-state switch in the on mode, and wherein when the input current through said solid-state switch exceeds the respective maximum current rating said processing element places the respective solid-state switch in the off mode.

62. A system according to Claim 55, wherein said at least one solid-state switch has a maximum current rating, wherein when the current through a respective solid-state switch exceeds a respective maximum current rating for more than a predefined period of time, said processing element places the respective solid-state switch in the off mode.

63. A system according to Claim 55, wherein said processing element controls the mode of said at least one solid-state switch depending upon a temperature of a respective solid-state switch.

64. A system according to Claim 63, wherein when the temperature of a respective solid-state switch is no more than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the temperature exceeds the predetermined value the processing element places the respective solid-state switch in the off mode.

65. A system according to Claim 63, wherein when the temperature of a respective solid-state switch is no less than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the temperature is below the predetermined value the processing element places the respective solid-state switch in the off mode.

66. A system according to Claim 55, wherein said processing element controls the mode of said at least one solid-state switch depending upon a voltage drop across a respective load.

67. A system according to Claim 66, wherein when the voltage drop across a respective load is no more than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the voltage drop exceeds the predetermined value the processing element places the respective solid-state switch in the off mode.

68. A system according to Claim 66, wherein when the voltage drop across a respective load is no less than a predetermined value the processing element operates the respective solid-state switch in the on mode, and wherein when the voltage drop is below the predetermined value the processing element places the respective solid-state switch in the off mode.

69. A method of remotely controlling an input current from a master controller through at least one switch to at least one load, said method comprising:

configuring a processing element disposed remote the master controller and proximate the at least one load, wherein said configuring is based upon at least one characteristic selected from a group consisting of a current rating of each load, a voltage rating of each load, a maximum current rating of each switch and a temperature rating of each switch;

monitoring at least one parameter associated with each switch and respective load selected from a group consisting of the input current to the load, a voltage drop across the load, the input current through the switch and a temperature of the switch;

determining a condition of each switch and respective load depending upon at least one of the at least one characteristic and the at least one parameter;

operating each switch in at least one mode selected from a group consisting of an on mode wherein the switch permits the input current to flow to a respective load, and an off mode wherein the switch prevents the input current from flowing to the respective load, wherein the operating mode selected depends upon the condition of the respective loads.

70. A method according to Claim 69, wherein said determining the condition comprises determining the condition of each load based upon the maximum current rating of the respective switch and the input current through the switch.

71. A method according to Claim 70 wherein operating each switch comprises operating the in the on mode when the input current through the switch is no more than a respective maximum current rating, and operating the switch in the off mode when the input current through the switch exceeds the maximum current rating.

72. A method according to Claim 70, wherein operating each switch comprises operating the switch in the off mode when the current through the switch exceeds the maximum current rating for more than a predefined period of time.

73. A method according to Claim 69, wherein said determining the condition comprises determining the condition of each load based upon the current rating of the load and the input current to the load.

74. A method according to Claim 73, wherein operating each switch comprises operating the switch in the on mode when the input current to a respective load is no more than a predetermined value relative to the current rating of the load, and operating the switch in the off mode when the input current to the load exceeds the predetermined value.

75. A method according to Claim 73, wherein said determining the condition further depends upon an amount of time the load has received the input current.

76. A method according to Claim 75, wherein operating each switch comprises operating the switch in the on mode when the input current to a respective load is no more than the input current rating of the load, and operating the switch in the off mode when the input current to the load exceeds the input current rating for more than a predefined period of time.

77. A method according to Claim 76, wherein said determining the condition comprises repeatedly increasing a count associated with an elapsed time when the input current to a respective load exceeds the input current rating, wherein increasing the count comprises increasing the count until at least one occurrence selected from a group consisting of the input current reduces to no more than the input current rating and the count reaches a predetermined threshold representative of the predefined period of time, and wherein said determining the condition further comprises repeatedly decreasing the count when the input current reduces to no more than the input current rating.

78. A method according to Claim 69, wherein said determining the condition comprises determining the condition of each switch based upon the temperature rating of the switch and the temperature of the switch.

79. A method according to Claim 78, wherein said operating each switch comprises operating the switch in the on mode when the temperature of the switch is no more than a predetermined value relative to the respective temperature rating, and

operating the switch in the off mode when the temperature exceeds the predetermined value.

80. A method according to Claim 78, wherein said operating each switch comprises operating the switch in the on mode when the temperature of a respective solid-state switch is no less than a predetermined value relative to the respective temperature rating, and operating the switch in the off mode when the temperature is below the predetermined value.

81. A method according to Claim 69, wherein said determining the condition comprises determining the condition of each load based upon the voltage rating of the load and the voltage drop across the load.

82. A method according to Claim 81, wherein operating each switch comprises operating the switch in the on mode when the voltage drop across a respective load is no more than a predetermined value relative to the voltage rating of the load, and operating the switch in the off mode when the voltage drop exceeds the predetermined value.

83. A method according to Claim 81, wherein operating each switch comprises operating the switch in the on mode when the voltage drop across a respective load is no less than a predetermined value relative to the voltage rating of the load, and operating the switch in the off mode when the voltage drop is below the predetermined value.